

## CLAIMS

1. A dental tool for use with an ultrasonic transducer, the tool comprising:  
2 a substantially elongate tool defined by a shaft having a proximal end with attachment  
means at said proximal end for attachment to an ultrasonic transducer, and a distal end having  
4 a tip configured for performing a dental procedure; and  
a fluid passage extending from said proximal end to a port configured and positioned to  
6 direct fluid onto said tip.

2. The tool of claim 1, wherein said shaft has a bend at said distal end distal end  
forming said tip to extend at an angle to said shaft and said port directs fluid from a position on  
said shaft onto said tip.

3. The tool of claim 2, wherein said tip extends at an angle of between 75 and 90  
degrees to said shaft.

4. The tool of claim 3, wherein said port is closely adjacent said bend forming said  
tip and on the same side of said shaft as said tip.

5. The tool of claim 4, wherein said shaft has at least one bend between said  
attachment means and said bend forming said tip.

6. The tool of claim 4, wherein said tip is formed with a sharp point having a diameter of about 1/64 inch.

7. The tool of claim 4, wherein said shaft has a continuous taper from said attachment means to said tip.

8. The tool of claim 1, wherein said shaft has a continuous taper from said attachment means to said tip.

9. The tool of claim 8, wherein said shaft has a bend at said distal end forming said tip extending at an angle to said shaft and said port directs fluid from a position on said shaft adjacent said bend onto said tip.

10. The tool of claim 9, wherein said tip extends at an angle of between 75 and 90 degrees to said shaft.

11. The tool of claim 9, wherein said tip is formed with a sharp point having a diameter of about 1/64 inch.

12. The tool of claim 9, wherein titanium is an alloy containing about three and one-half to about four and one-half percent vanadium.

13. The tool of claim 9, wherein said shaft has at least one bend between said  
2 attachment means and said bend forming said tip.

14. The tool of claim 13, wherein said shaft has multiple bends between said  
2 attachment means and said bend forming said tip.

15. The tool of claim 8, wherein said tip is roughened by minute depressions in the  
2 body of the shaft at least in an area adjacent the point.

16. The tool of claim 1, wherein said tool has a hub with a generally cylindrical  
2 mounting socket and further comprising a quick connect connector comprising:

a shaft adapted for attachment to a hand piece of an ultrasonic generator;

an expandable sleeve adapted for mounting on said shaft and extending into said socket;

and

a cam member on one of said sleeve and shaft operatively camming said sleeve into  
engagement with said mounting socket.

17. The tool of claim 16, wherein said shaft and said sleeve have threads for moving  
2 said sleeve axially along said shaft to affect said camming.

18. A method for making a dental tool for use with an ultrasonic transducer using a  
2 lathe, the method comprising:

providing a substantially elongate stock material defining a shaft having a distal end  
4 section with a tip and a central bore;

placing the stock material in a guide bushing of the lathe;

6 bending the distal end section of the stock material to offset the central bore outlet with  
respect to the axial orientation of the central bore; and

8 turning the stock material in the lathe at the distal end section, thereby producing a dental  
tool with a working tip and an outlet port to direct fluid onto said tip.

19. The method of claim 18, wherein the step of turning the stock material in the lathe  
includes forming a bend point in the shaft prior to the step of bending the distal end section of  
the stock material bending the distal end includes forming a contra-angle portion curved outward  
in a first direction from said axis at an angle of about fifteen degrees and curved outward in a  
second direction across said axis at about forty-five degrees to said axis to said tip.

20. The method of claim 19, wherein the step of turning the stock material in the lathe  
includes forming attachment means of the stock material at a proximal end and a continuous taper  
from said attachment means to said tip;

4 said shaft has a continuous taper from said attachment means to said tip.

21. The method of claim 20, including the further step of bending the distal end  
2 forming said tip at an angle with respect the shaft.

22. The method of claim 21, including the further step of roughening at least said tip  
2 by forming minute depressions in the body of the shaft at least in an area adjacent the point.

23. A quick change connector for a dental tool, comprising:  
2 a generally cylindrical mounting socket on said tool;  
an elongate shaft on a hand piece of an ultrasonic generator;  
4 an expandable sleeve adapted for mounting on said shaft and extending into said socket;  
and  
6 a cam member on one of said sleeve and shaft operatively camming said sleeve into  
engagement with said mounting socket.

24. The quick change connector of claim 23, wherein said shaft and said sleeve have  
2 threads for moving said sleeve axially along said shaft to affect said camming.

25. The quick change connector of claim 24, wherein said shaft and said sleeve have  
2 each have a cam member thereon.

26. The quick change connector of claim 23, wherein:  
2 said sleeve has an annular circumferential member thereon; and  
said socket has a circumferential groove for engaging said circumferential member for  
4 positioning said socket.

27. The quick change connector of claim 23, wherein:

2        said sleeve has at least one annular circumferential groove thereon adapted to enhance gripping of said socket by said sleeve.

11/11/2018 11:11:11 AM